

What is claimed is:

1. An isolated peptide comprising the amino acid sequence selected from the general structural formula Ia, Ib, Ic and Id:

Cap-AA8-AA7-AA6-AA5-AA4*-AA3-AA2-AA1*	8-mer	Ia
Cap-AA7-AA6-AA5-AA4*-AA3-AA2-AA1*	7-mer	Ib
Cap-AA6-AA5-AA4*-AA3-AA2-AA1*	6-mer	Ic
Cap-AA5-AA4*-AA3-AA2-AA1*	5-mer	Id

wherein

AA1 is selected from:

- (a) Gly,
- (b) Ala,
- (c) Leu, and
- (d) a small aliphatic amino acid;

AA2 is selected from:

- (a) Phe,
- (b) Tha,
- (c) Cha,
- (d) Tyr,
- (e) Pya,
- (f) Trp, and
- (g) another aromatic amino acid;

AA3 is selected from:

- (a) Leu,
- (b) Cpa, and
- (c) a natural or unnatural aliphatic amino acid;

AA4 is selected from:

- (a) Lys,
- (b) Lys substituted by C₁-C₁₇ alkyl, C₅-C₂₀ arylalkyl or a C₆-C₂₀ aryl radical,
- (c) Orn optionally substituted by C₁-C₁₇ alkyl, C₅-C₂₀ arylalkyl or a C₆-C₂₀ aryl radical, and
- (d) hLys optionally substituted by C₁-C₁₇ alkyl, C₅-C₂₀ arylalkyl or a C₆-C₂₀ aryl radical;

AA5 is selected from:

- (a) Arg,
- (b) Lys,
- (c) Orn,
- (d) hLys, and
- (e) His;

AA6 is selected from:

- (a) Lys,
- (b) hLys,
- (c) Orn,
- (d) Lys wherein N^ε is substituted by one or two radicals selected from C₅-C₂₀ alkyl, a linear or branched C₁-C₆ acyl group, cyclized saturated or unsaturated C₅-C₂₀ alkyl, C₅-C₂₀ arylalkyl and a C₆-C₂₀ aryl radical, and
- (e) Orn wherein N^δ is substituted by one or two radicals selected from C₅-C₂₀ alkyl, a linear or branched C₁-C₆ acyl group, cyclized saturated or unsaturated C₅-C₂₀ alkyl, C₅-C₂₀ arylalkyl and a C₆-C₂₀ aryl radical;

AA7 is selected from:

- (a) Ala,
- (b) Val, and

(c) a natural or unnatural amino acid, or mimetics or isostere thereof;

AA8 is selected from:

(a) Pro,

(b) a natural or unnatural amino acid, or mimetics or isostere thereof; and

the Cap is either not present or selected from:

(a) C₁-C₈ acyl, and

(b) C₃-C₈ cycloalkylalkanoyl or furanylacetyl;

and pharmaceutically acceptable salts thereof;

such a peptide being optionally linked to nuclear localization peptide sequences HIV-1 Tat or *Antennapedia* peptide sequence (penetratin);

and the (*) symbol indicates a site for optional intramolecular linkage via an amide, substituted amide bond or isostere thereof; the resulting compounds being the respective cyclic 5-mers, 6-mers, 7-mers, or 8-mers.

2. An isolated peptide according to claim 1, wherein

AA1 is selected from:

(a) Gly,

(b) Ala, and

(c) Leu;

AA2 is selected from:

(a) Phe,

(b) Tha,

(c) Cha,

(d) Tyr,

(e) Pya, and

(f) Trp;

AA3 is selected from:

- (a) Leu,
- (b) Cpa, and
- (c) a natural aliphatic amino acid;

AA4 is selected from:

- (a) Lys,
- (b) Orn, and
- (c) hLys;

AA5 is selected from:

- (a) Arg,
- (b) Lys,
- (c) Orn,
- (d) hLys, and
- (e) His;

AA6 is selected from:

- (a) Lys,
- (b) hLys,
- (c) Orn;

AA7 is selected from:

- (a) Ala,
- (b) Val, and
- (c) a natural amino acid;

AA8 is selected from:

- (a) Pro,
- (b) a natural amino acid; and

the Cap is either not present or selected from:

- (a) acetyl (Ac), cyclopropylcarbonyl, cyclopropylacetyl (Cpr), pivaloyl, isopropylcarbonyl, isopropylacetyl, 2,2-dimethylbutanoyl (Dmb), levulinoyl, cyclopropylglycinoyl (Cpg), dimethylglycinoyl (Dmg), and

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and pharmaceutically acceptable salts thereof;

and the (*) symbol indicates a site for optional intramolecular linkage via an amide bond; the resulting compounds being the respective cyclic 5-mers, 6-mers, 7-mers, or 8-mers.

the cyclic 5-mer:

Ac-Lys-(Lys-Leu-Phe-Gly);

Ac-Lys-Arg-(Lys-Leu-Phe-Gly),

Cpr-Lys-Arg-(Lys-Leu-Phe-Gly),

Cpr-Lys-Lys-(Lys-Leu-Phe-Gly),

Cpr-Lys-(C₅-C₂₀)-Lys-(Lys-Leu-Phe-Gly),

Cpr-Lys-(C₅-C₂₀)-Arg-(Lys-Leu-Phe-Gly),

Cpr-Lys-(CH(CH₃)(C₁₃H₂₇))-Lys-(Lys-Leu-Phe-Gly).

Dmb- Lys-(C₅-C₂₀)-Arg-(Lys-Leu-Phe-Gly), or

Dmb- Lys-(C₅-C₂₀)-Lys-(Lys-Leu-Phe-Gly);

Ac-Ala-Lys-Arg-(Lys-Leu-Phe-Gly),

Ac-Ala-Lys-Lys-(Lys-Leu-Phe-Gly),

Cpr-Ala-Lys-Arg-(Lys-Leu-Phe-Gly), or

Cpr-Ala-Lys-Lys-(Lys-Leu-Phe-Gly);

or

the cyclic 8-mer:

Pro-Ala-Lys-Arg-(Lys-Leu-Phe-Gly),
Ac-Pro-Ala-Lys-Arg-(Lys-Leu-Phe-Gly),
Ac-Pro-Ala-Lys-Lys-(Lys-Leu-Phe-Gly),
Cpr-Pro-Ala-Lys-Arg-(Lys-Leu-Phe-Gly), or
Cpr-Pro-Ala-Lys-Lys-(Lys-Leu-Phe-Gly);

wherein parentheses indicate the residues involved in cyclization;

and pharmaceutically acceptable salts of such peptides.

4. A peptide according to claim 1 or a pharmaceutically acceptable salt thereof for use in a method for the therapeutic treatment of a mammal.
5. A pharmaceutical composition comprising a peptide according to claim 1, or a pharmaceutically acceptable salt thereof, together with a pharmaceutically acceptable carrier.
6. A pharmaceutical composition for the treatment of cancer in a mammal comprising, in a therapeutically effective amount, a peptide according to claim 1, or a pharmaceutically acceptable salt thereof, together with a pharmaceutically acceptable carrier.
7. The use of a peptide according to claim 1 or a pharmaceutically acceptable salt thereof for the preparation of a pharmaceutical composition for use in the treatment of cancer.
8. The use of a peptide according to claim 1 or a pharmaceutically acceptable salt thereof in the treatment of cancer.

10. A method of inhibiting the binding of the E2F-1 cell regulatory protein to Cyclin A comprising administering to a mammal in need of such treatment a therapeutically effective amount of a peptide according to claim 1, or a pharmaceutically acceptable salt thereof.

Parameter	Value	Unit
Mean	1.00	
Standard deviation	0.10	
Minimum	0.80	
Maximum	1.20	
Range	0.40	
Skewness	0.00	
Kurtosis	0.00	
Mean square	0.01	
Adjusted R square	0.00	
ANOVA		
Sum of squares	0.01	
Mean square	0.01	
F	0.00	
Sig.	0.99	
Regression		
Sum of squares	0.01	
Mean square	0.01	
F	0.00	
Sig.	0.99	
Residual		
Sum of squares	0.00	
Mean square	0.00	
F	0.00	
Sig.	0.99	
Total		
Sum of squares	0.01	
Mean square	0.01	
F	0.00	
Sig.	0.99	